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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,601	12/12/2003	Jonathan F. Smith	95-02	2496

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EXAMINER	
KELLY, ROBERT M	

ART UNIT	PAPER NUMBER
1633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,601	SMITH ET AL.	
	Examiner	Art Unit	
	ROBERT M. KELLY	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 20-32* is/are pending in the application.

4a) Of the above claim(s) *1-15 and 20-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16 and 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/6/08 has been entered.

The RCE of 5/6/08 requests entry of the amendment and argument of 3/26/08, and hence, such is entered.

Claims 16 is amended.

Claims 17-19 are cancelled.

Claim 32 is newly entered.

Claims 1-16 and 20-32 are presently pending.

Claim Status - Cancelled Claims

In light of the cancellation of Claims 17-19, all rejections and/or objections to such claims are rendered moot, and thus, are withdrawn.

Election/Restrictions

Claims 1-15 and 20-31 remain withdrawn as drawn to non-elected inventions.

Claims 16 and 32 are presently considered.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

In light of the acceptance of the terminal disclaimer to U.S. Patent No. 7,078,218, the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 7,078,218, is withdrawn.

In light of the amendments, the rejection of Claims 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 7,090,852, is withdrawn.

To wit, the claims now exclude antigens exclude the antigens of the patent's claims.

In light of the amendments, the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-3 and 8-9 of U.S. Patent No. 6,783,939, is withdrawn.

To wit, the patent claims do not encompass tumor gene antigens, but instead HIV antigens.

While the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-8, 10-15, 33-40, 44-49 and 51-77 of U.S. Patent No. 6,521,235, is withdrawn due to the inclusion of cancer antigens;

Claims 16 and 32 are newly rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-8, 10-15, 33-40, 44-49 and 51-77 of U.S. Patent No. 6,521,235 in view of Slovin, et al. (1999) Proc Natl Acad Sci, USA, 96(10): 5710-15, Nestle, et al. (1998) Nature Medicine, 4(3): 328-32, and Smooker, et al. (2000) Vaccine, 18: 2533-40.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences between the inventions are the patent claiming specific viral replicons, claiming specific attenuating mutations, and the claiming of cancer antigen(s). However, the claims of the patent, do not claim specific antigens. However, the instant specification teaches attenuating mutations to the E1-E3 (e.g., p.6), and the specific attenuating mutations (the references cited in e.g., p. 6). Further, the patent teaches protozoa, bacterial, and viral antigens in general (e.g., cols. 5-6), but not tumor antigens.

On the other hand, (i) Slovin teaches that multiple antigens for the tumor may be used to develop multivalent vaccines (e.g., ABSTRACT); (ii) Nestle teaches a cocktail of peptides used

to produce cancer immunity (e.g., ABSTRACT), and (iii) Smooker demonstrates that a library of genes may be administered to develop an immune response.

Hence, at the time of invention, it would have been obvious to modify the populations of VEE replicons of the patent to comprise multiple heterologous antigens from a tumor. The Artisan would do so to develop a multivalent vaccine and produce cancer immunity. The Artisan would also have a reasonable expectation of success, as such multivalent vaccines are already known to work.

Response to Argument – ODP 6,521,235

Applicant's argument of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that there is nothing which makes obvious the method of making the product, and the dependent claims of the patent appear to indicate a singular immunogen or fragment (p. 13, penultimate paragraph).

Such is not persuasive. The composition is claimed, not the method of making. Moreover, the broadest possible reading of the patented claims encompass multiple antigens, and further, Claim 2 indicates that the other claims encompass more than one, while Claim 3 specifically indicates more than one.

While the rejection of Claim 16, on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 32, 34-35, 37, 40, 42, 44-45, 47, 50-52, 54-55, 57, 60, 62, 64-65, 67, 70, 72, 74-75, 77, 80, 82, 84-90 of U.S. Patent No. 6,531,135, is withdrawn due to the inclusion of tumor antigens;

Claims 16 and 32 are newly rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 32, 34-35, 37, 40, 42, 44-45, 47, 50-52, 54-55, 57, 60, 62, 64-65, 67, 70, 72, 74-75, 77, 80, 82, 84-90 of U.S. Patent No. 6,531,135 in view of Slovin, et al. (1999) Proc Natl Acad Sci, USA, 96(10): 5710-15, Nestle, et al. (1998) Nature Medicine, 4(3): 328-32, and Smooker, et al. (2000) Vaccine, 18: 2533-40.

While the claims are not identical, the differences between the claims are the patent claiming specific virus replicons and the absence of tumor antigens in the patent . Further, the specifications each direct the artisan to use encoding sequences from similar viruses (e.g., PATENT, col. 5). However, the patent does not teach tumor antigens.

On the other hand, (i) Slovin teaches that multiple antigens for the tumor may be used to develop multivalent vaccines (e.g., ABSTRACT); (ii) Nestle teaches a cocktail of peptides used to produce cancer immunity (e.g., ABSTRACT), and (iii) Smooker demonstrates that a library of genes may be administered to develop an immune response.

Hence, at the time of invention, it would have been obvious to modify the populations of VEE replicons of the patent to comprise multiple heterologous antigens from a tumor. The Artisan would do so to develop a multivalent vaccine and produce cancer immunity. The Artisan would also have a reasonable expectation of success, as such multivalent vaccines are already known to work.

Response to Argument – ODP 6,531,135

Applicant's response of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that the salt wash step is essential to allowing these particles to be made (p. 14, last paragraph).

Such is not persuasive. If the salt wash is essential to making such a composition, why were the claims of the patent allowed? Applicant is indirectly arguing a lack of enablement with such argument, but the claims are presumed enabled. Moreover, a salt wash appears to have little to do with the growth of particles.

Applicant argues that the claims are drawn to a tumor cell antigens (Id.).

Such is not persuasive. The new basis of rejection takes care of the tumor cell antigens.

While the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13, 16-17, 19, 23-35, 37-55, 57, and 61 of U.S. Patent No. 6,156,558, is withdrawn;

Claims 16 and 32 are newly rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 32, 34-35, 37, 40, 42, 44-45, 47, 50-52, 54-55, 57, 60, 62, 64-65, 67, 70, 72, 74-75, 77, 80, 82, 84-90 of U.S. Patent No. 6,531,135 in view of Slovin, et al. (1999) Proc Natl Acad Sci, USA, 96(10): 5710-15, Nestle, et al. (1998) Nature Medicine, 4(3): 328-32, and Smooker, et al. (2000) Vaccine, 18: 2533-40.

The differences between the instant claims and the patent claims are that the patent encompasses not only claims the generic alphavirus, but also claims specific viruses encompassed, and further comprises specific attenuating mutations. Moreover, the patent, while not specifically claiming antigens, does not teach the use of viral antigens (e.g., col. 5).

On the other hand, (i) Slovin teaches that multiple antigens for the tumor may be used to develop multivalent vaccines (e.g., ABSTRACT); (ii) Nestle teaches a cocktail of peptides used

to produce cancer immunity (e.g., ABSTRACT), and (iii) Smooker demonstrates that a library of genes may be administered to develop an immune response.

Hence, at the time of invention, it would have been obvious to modify the populations of VEE replicons of the patent to comprise multiple heterologous antigens from a tumor. The Artisan would do so to develop a multivalent vaccine and produce cancer immunity. The Artisan would also have a reasonable expectation of success, as such multivalent vaccines are already known to work.

Response to Argument – ODP against 6,156,558

Applicant's response of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that the salt wash step is essential to allowing these particles to be made (p. 15, last paragraph).

Such is not persuasive. If the salt wash is essential to making such a composition, why were the claims of the patent allowed? Applicant is indirectly arguing a lack of enablement with such argument, but the claims are presumed enabled. Moreover, a salt wash appears to have little to do with the growth of particles.

Applicant argues that the claims are drawn to a tumor cell antigens and more than 2 antigens as it is a library (Id.).

Such is not persuasive. The new basis of rejection takes care of the tumor cell antigens, as well as more than one antigen. Moreover, again it is stressed that there is no basis for a library being limited to more than 2. The term library is not one that provides a number of members in the library, but the term represents the use of the members of the library, which can be repeatedly accessed.

While the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 22-26, 28-29, 31-34, and 36-37 of U.S. Patent No. 6,541,010, is withdrawn;

Claims 16 and 32 are newly rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 22-26, 28-29, 31-34, and 36-37 of U.S. Patent No. 6,541,010 in view of Slovin, et al. (1999) Proc Natl Acad Sci, USA, 96(10): 5710-15, Nestle, et al. (1998) Nature Medicine, 4(3): 328-32, and Smooker, et al. (2000) Vaccine, 18: 2533-40.

The differences between the instant claims and the patent's claims are that the patent has attenuating mutations encompassed, specific viruses encompassed, and no specific heterologous sequence claimed. However, the patent's specification teaches prokaryotic, eukaryotic, protozoa, and viral antigens (e.g., cols. 11-12, paragraph bridging), but no cancer anitgens.

On the other hand, (i) Slovin teaches that multiple antigens for the tumor may be used to develop multivalent vaccines (e.g., ABSTRACT); (ii) Nestle teaches a cocktail of peptides used to produce cancer immunity (e.g., ABSTRACT), and (iii) Smooker demonstrates that a library of genes may be administered to develop an immune response.

Hence, at the time of invention, it would have been obvious to modify the populations of VEE replicons of the patent to comprise multiple heterologous antigens from a tumor. The Artisan would do so to develop a multivalent vaccine and produce cancer immunity. The Artisan would also have a reasonable expectation of success, as such multivalent vaccines are already known to work.

Response to Argument – ODP against 6,541,010

Applicant's argument of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that the salt wash step is essential to allowing these particles to be made (p. 16, last paragraph).

Such is not persuasive. If the salt wash is essential to making such a composition, why were the claims of the patent allowed? Applicant is indirectly arguing a lack of enablement with such argument, but the claims are presumed enabled. Moreover, a salt wash appears to have little to do with the growth of particles.

Applicant argues that the claims are drawn to a tumor cell antigens (Id.).

Such is not persuasive. The new basis of rejection takes care of the tumor cell antigens, as well as more than one antigen.

In light of the abandonment of Application No. 10/517,083, the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 10/517,083, are withdrawn.

In light of the abandonment of Application No. 10/517,083, the rejection of Claim 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-9, 17-18, and 23-26 of copending Application No. 10/929,234, is withdrawn.

Claims 16 and 31 remain and/or are newly provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23, 24, and 25

of copending Application No. 11/132,711. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the other Application's claims are drawn to TC-83 viral replicons, and do not teach claim any particular heterologous sequences, the present specification teaches the use of TC-83 strain (which is VEE), because of its naturally attenuated phenotype (e.g., p. 17), and the other Application teaches all the same specifically claimed species of antigen (e.g., p. 25), and moreover Claims that it may be optimized, to comprise a number of immunogens from, e.g., a tumor (e.g., paragraph 0071 of the Application Publication 2005/0266550). Hence, in light of the teachings and claims of the 11/132,711 Application, it would have been obvious to make the present invention. The Artisan would have been motivated to do so in order to treat cancers. Moreover, the Artisan would have expected success, as the other Application teaches it will work.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Argument – ODP against 11/132,711

Applicant's argument of 8/8/07 has been fully considered but is not found persuasive.

Applicant appears to wish the rejections remain in abeyance, and hence, they are (e.g., pp. 18-19, paragraph bridging).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(f) he did not himself invent the subject matter sought to be patented.

Claim Rejections - 35 USC § 102

In light of Applicant's argument, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by 7,078,218 to Smith, et al., is withdrawn.

To wit, the references has the same priority, and hence is not available as prior art.

Claim Rejections - 35 USC § 102

In light of the amendments, the rejection of Claims 16 under 35 U.S.C. 102(e) as being anticipated by US PAT NO 6,521,235 to Johnston, et al., patented February 18, 2003; and

The rejection of Claim 16 under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter, are withdrawn.

To wit, the claims now require the antigens to be from a tumor, and the patent and publication do not claim nor teach tumor antigens.

Claim Rejections - 35 USC § 102

In light of the amendments, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,090,852 to Hevey, et al., is withdrawn.

To wit, the claims now require the antigen to be from a tumor, which is neither claimed nor taught by Hevey.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,783,939 to Olmstead, Patented 8/31/04, is withdrawn.

To wit, Olmstead does not teach nor claim cancer antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,521,235 to Johnston, et al., Patented 2/18/03, is withdrawn.

To wit, Johnston does not teach nor claim cancer antigens

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,531,135 to Johnston, et al., Patented 3/11/03, is withdrawn.

To wit, Johnston does not teach nor claim cancer antigens

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(a) as being anticipated by U.S. Patent Publication No. 20020034521 to Lee, et al., Published 3/21/02 and

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,495,143, to Lee, et al., Patented 12/17/02, are withdrawn.

To wit, Lee does not teach nor claim tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,632,640 to Lee, et al., Patented 10/14/03, is withdrawn.

To wit, Lee does not teach nor suggest tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,770,479 to Lee, et al., patented August 3, 2004, is withdrawn.

To wit, Lee does not teach nor suggest tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(a) as being anticipated by U.S. Patent Publication No. 2002/0164582 to Hart, et al., Published 11/7/02, is withdrawn.

To wit, Hart does not teach tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,517,842 to Hevey, et al., Patented 2/11/03, is withdrawn.

To wit, Hevey does not teach nor claim tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,156,558 to Johnston, et al., Patented 12/5/00, is withdrawn.

To wit, Johnston does not teach tumor antigens.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,451,592 to Dubensky, et al., Patented 9/17/02; and

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,451,592 to Dubensky, et al., Patented 9/17/02, are withdrawn.

To wit, the use of multiple tumor antigens is not taught.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,792,462 to Johnston, et al., Patented 8/11/98, is withdrawn.

To wit, Johnston does not teach tumor antigens.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

In light of the argument, the rejection of Claim 16 under 35 U.S.C. 103(a) as being obvious over 7,078,218 to Smith, et al., and Slovin, et al. (1999) Proc Natl Acad Sci, USA, 96(10): 5710-15, is withdrawn.

To wit, the priority is exactly the same between Smith and the instant Application, and hence, it is not available as prior art.

Claims 16 and 32 remain, or are newly, rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,156,558 to Johnston, et al., Patented 12/5/00, Nestle, et al. (1998) Nature Medicine, 4(3): 328-32 (ABSTRACT ONLY), and Smooker, et al. (2000) Vaccine, 18: 2533-40, for reasons of record.

Johnston teaches the use of similar VEE and alpha-virus replicon particles, in vaccines. (E.g., ABSTRACT; col. 3, paragraph 4; col. 4, paragraph 2; cols. 7-8, paragraph bridging.) Moreover, Johnston demonstrates that the particles are sufficient to produce immune responses against foreign gene encoded proteins (e.g., FIGURE 3). However, Johnston does not teach a plurality of replicons encoding a plurality of antigens, or the use of antigens to cancer.

On the other hand, Nestle teaches a cocktail of peptides used to produce cancer immunity (e.g., ABSTRACT), and Smooker demonstrates that a library of genes may be administered to develop an immune response.

Hence, at the time of invention, it would have been obvious to make a plurality of alphaviral replicons encoding the different peptides of Nestle. The Artisan would have been motivated to do so to produce an immune response to cancer, using the method of Smooker instead of actual delivery of the polypeptides. Moreover, the Artisan would have had a reasonable expectation of success, as Smooker had demonstrated that a plurality of antigens could have been so-delivered and Nestle teaches that the plurality of peptides produced immune response to cancer.

Response to Argument – 103, Johnston `558, Smooker, Nestle

Applicant's argument of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that the Smooker reference teaches creation of a secreted peptide expression library with peptides that are small, and therefore is of partial proteins, and by virtue of the need for in-frame fusions, only 1 in 6 clones represent a portion of protein expressed in the antigen source, which is different from that of the specification or what is claimed presently (p. 35, paragraph 2).

Such is not persuasive. Applicant's claims simply state to make an expression library of a tumor cell, it does not specify only to have full-length expression proteins, or to only have non-secreted proteins, or to avoid out-of-frame expressions. Moreover, it claims "making a nucleic acid expression library of a tumor cell". That necessarily means there is more than one nucleic acid expression library which could be made. Which indicates that even if Smooker were the sole library which was obvious, it would still be encompassed by the claims. However, Smooker is not utilized or limited to the type of library Smooker made, because Smooker is utilized to demonstrate that a plurality of antigens can be so-delivered, not that this library of Smooker is the only type of library which could be utilized. Clearly, the rejection is under 103, which indicates that Johnston's teaching of multiple full-length antigens would also be encompassed, as well as the fact that Nestle teaches lysates of tumors being used, which indicates the awareness that in-context full-length antigens could be used. Hence, Applicant's arguments appear to miss the point of the rejection under obviousness rather than anticipation.

Applicant argues that Nestle teaches vaccination of melanoma patients with peptide or tumor cell lysate pulsed dendritic cells (p. 35, paragraph 3).

Such is not persuasive. Nestle is used to demonstrate that in-context proteins can also produce immune responses. Hence, from this, the Artisan instantly recognizes that multivalent

antigen equivalents can be used in the form of the antigen expressed from DNAs as a library from the tumor cell. Again, Nestle is not utilized in a rejection of anticipation, but one of obviousness.

Applicant argues that the combined references are limited to the exact teachings of each reference, and does not make obvious the presently claimed invention (p. 35, last paragraph).

Such is not persuasive. The rejection properly outlines that the viruses would be made with various nucleic acids to express antigens from the tumor cell, and is properly argued by the Exmainer. To argue the art in a piecemeal fashion is incorrect, as the rejection is under 103, obviousness, rather than under anticipation.

Applicant argues that the salt-wash step allows for unexpected levels of recovery (p. 35, last paragraph).

Such is not persuasive. Applicant has claimed the composition, by process, but the composition nonetheless. Hence, an equivalent process, e.g., growing up more virus without the "special" salt wash, would still yield high amounts of virus. Therefore, it is still obvious. There is nothing in the structure of the virus composition obtained which is distinct from that made by a distinct process, and hence, it is still obvious.

In light of the amendments, the rejection of Claim 16 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,156,558 to Johnston, et al., Patented 12/5/00, and Smooker, et al. (2000) Vaccine, 18: 2533-40, is withdrawn.

To wit, neither reference teaches cancer antigens as being encoded.

In light of the amendments, the rejection of Claim 16 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,235,290 to Brunham, Patented 5/22/01 and U.S. Patent No. 6,156,558 to Johnston, et al., Patented 12/5/00 and Smooker, et al. (2000) Vaccine, 18: 2533-40, is withdrawn.

To wit, the references do not teach/suggest the use of tumor antigens.

Claims 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,866,553 to Donnelly, et al., Patented 2/2/99, U.S. Patent No. 6,156,558 to Johnston, et al., Patented 12/5/00 and Smooker, et al. (2000) Vaccine, 18: 2533-40.

Donnelly teaches eliciting immune responses to papilloma virus via DNA constructs encoding papilloma virus gene products (e.g., ABSTRACT, TITLE). Further, several antigens are taught for such encoded genes, which may be used in combination (e.g. col. 5, paragraph 2). Still further, it is noted that papilloma virus is not only a virus, but a major cause of cancer in women (cervical cancer), and hence, such immunization is also against cancer.

Johnston teaches the use of the equivalent alpha-viral and VEE replicon particles, in vaccines. (E.g., ABSTRACT; col. 3, paragraph 4; col. 4, paragraph 2; cols. 7-8, paragraph bridging.) Moreover, Johnston demonstrates that the particles are sufficient to produce immune responses against foreign gene encoded proteins (e.g., FIGURE 3).

Smooker teaches a library of epitopes, expressed on separate plasmids (a library), for immunizing mice against Plasmodium chabaudi, a protozoan (ABSTRACT).

Hence, at the time of invention, it would have been obvious to modify the composition of Donnelly to encode different antigens of HPV in the alphaviruses of Johnston. The Artisan

would have been motivated to do so to provide immunity against the virus HPV and cancer. Moreover, the Artisan would have had reasonable expectation of success, as Smooker had taught that large libraries of particles could elicit immunity. Lastly, as these antigens are expressed in the papilloma-caused tumor cells, it is the equivalent of an expression library of such a tumor cell.

Response to Argument – 103, Donnelly/Johnston/Smooker

Applicant's argument of 3/26/08 has been fully considered but is not found persuasive.

Applicant argues that the expression library is from tumor cell, and hence, the claims are not obvious (p. 40, paragraph 2).

Such is not persuasive. The proteins, being expressed from the papilloma virus, are also expressed in the papilloma tumors, and hence, is an equivalent of a tumor cell expression library of such tumors.

Applicant argues that the salt wash allows for large yields (p. 40, paragraph 2 and p. 41, paragraph 1).

Such is not persuasive. This is a product-by-process, and hence, even if Applicant's argument of higher yield is true, it would simply require that the Art-known methods utilize larger amounts for purification to yield the relative amount equivalent to any specific salt-wash step including method.

Applicant argues that Donnelly teaches only specific combinations, and implying that none of the combinations are from a single type of HPV (p. 40, last paragraph).

Such is not persuasive. Donnelly specifically teaches combinations of E1, E2, L1 and L2 proteins from a single papilloma virus (e.g., col. 5, paragraph 3).

Applicant argues that Smooker teaches plasmid libaries, and this is different from the protein of Donnelly, and these are distinct from the presently claimed invention (pp. 40-41, paragraph bridging).

Such is not persuasive. This is a rejection for obviousness. It is the combination of references that is important, and the references are not limited to exactly what each reference teaches in a vacuum.

Applicant argues that hindsight is required to make the rejection (p. 41, paragraph 1).

Such is not persuasive. The Examiner has not cited Applicant's specification to make the rejection. The basis of rejection is proper, as is explained in the rejection.

Applicant argues that Smooker is limited to biolistic particles with DNA vector, and hence, this is not the same as the claimed replicons (p. 41, paragraph 1).

Such is not persuasive. Smooker obtains expression of proteins by such methods, but Donnelly achieves the same by VEE replicons. The function of expression obtained are the same and interchangeable. These are different methods of obtaining the same expression of encoded proteins. How does this mean that Smooker, by teaching plasmids cannot be combined with another reference for the present obviousness-type rejection? The rejeciton is made with the knowledge and skill of the Artisan, and hence, Applicant's argument appears to ignore that the function obtained of expression and immunization due to such, to which the rejection requires, is the same.

In light of the amendment, the rejection of Claim 16 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,309,642 to Cutler, et al., Patented 10/30/01, U.S. Patent No.

6,156,558 to Johnston, et al., Patented 12/5/00 and Smooker, et al. (2000) Vaccine, 18: 2533-40, is withdrawn.

To wit, the amendment requires the antigens be from a tumor cell nucleic acid expression library, while Cutler is drawn to yeast.

Conclusion

No Claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT M. KELLY whose telephone number is (571)272-0729. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on (571) 272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Robert M Kelly/
Primary Examiner, Art Unit 1633